Below is a listing of the claims that will replace all prior versions and listings of claims in the present patent application.

Listing of Claims:

1. (Previously Presented) A gateway device for securely managing activities between at least one device and at least one service provider, comprising:

an authenticator that authenticates the identity of the at least one service provider and the at least one device;

an access authorizer that permits the at least one service provider to interact with the at least one device; and

an activity manager, responsive to the access authorizer and the authenticator, that manages the activities occurring between the at least one service provider and the at least one device, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

2. (Original) The gateway device according to claim 1, wherein the authenticator comprises a digital signature that uniquely identifies the gateway device to the at least one service provider and the at least one device.

3. (Original) The gateway device according to claim 1, wherein the authenticator comprises a digital signal verifier that verifies signatures associated with the at least one service provider and the at least one device.

4. (Original) The gateway device according to claim 1, wherein the authenticator comprises a cryptographic component that encrypts and decrypts activities between the at least one service provider and the at least one device.

5. (Original) The gateway device according to claim 1, wherein the access authorizer specifies permitted activities for the at least one service provider and the at least one device.

6. (Original) The gateway device according to claim 1, further comprising a request handler that receives activity requests from the at least one service provider and the at least one device.

7. (Original) The gateway device according to claim 1, further comprising a response component that receives activity responses from the at least one service provider and the at least one device.

8. (Original) The gateway device according to claim 1, further comprising a data format translator that translates the format of data transmitted and received by the at least one service provider and the at least one device.

9. (Original) The gateway device according to claim 1, further comprising a network protocol translator that translates a network protocol associated with the at least one service provider with a network protocol associated with the at least one device.

10. (Previously Presented) A gateway device for securely managing activities between a plurality of devices linked together in a first network and a plurality of service providers linked to the plurality of devices by a second network, comprising:

an authenticator that authenticates the identity of the plurality of devices and the plurality of service providers;

an access authorizer that permits the plurality of devices to interact with the plurality of service providers; and

an activity manager, responsive to the access authorizer and the authenticator, that manages the activities occurring between the plurality of devices and the plurality of service providers, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

11. (Original) The gateway device according to claim 10, wherein the authenticator comprises a digital signature that uniquely identifies the gateway device to the plurality of devices and the plurality of service providers.

12. (Original) The gateway device according to claim 10, wherein the authenticator comprises a digital signal verifier that verifies signatures associated with the plurality of devices and the plurality of service providers.

13. (Original) The gateway device according to claim 10, wherein the authenticator comprises a cryptographic component that encrypts and decrypts activities between the plurality of devices and the plurality of service providers.

14. (Original) The gateway device according to claim 10, wherein the access authorizer specifies permitted activities for the plurality of devices and the plurality of service providers.

15. (Original) The gateway device according to claim 10, further comprising a request handler that receives activity requests from the plurality of devices and the plurality of service providers.

16. (Original) The gateway device according to claim 10, further comprising a response component that receives activity responses from the plurality of devices and the plurality of service providers.

17. (Original) The gateway device according to claim 10, further comprising a data format translator that translates the format of data transmitted and received by the plurality of devices and the plurality of service providers.

18. (Original) The gateway device according to claim 10, further comprising a network protocol translator that translates a network protocol associated with the plurality of devices in the first network and a network protocol associated with the plurality of service providers in the second network.

19. (Previously Presented) A gateway device for securely managing activities between at least one device and at least one service provider, comprising:

a request handler that receives activity requests from the at least one service provider and the at least one device;

an authenticator that authenticates the identity of the at least one service provider and the at least one device;

an access authorizer that permits the at least one service provider to interact with the at least one device;

an activity manager that manages the activity requests occurring between the at least one service provider and the at least one device, wherein the activity requests comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider; and

a response component, responsive to the request handler, the authenticator, the access authorizer, and the activity manager, that receives activity responses from the at least one service provider and the at least one device.

20. (Original) The gateway device according to claim 19, wherein the authenticator comprises a digital signature that uniquely identifies the gateway device to the at least one service provider and the at least one device.

21. (Original) The gateway device according to claim 19, wherein the authenticator comprises a digital signal verifier that verifies signatures associated with the at least one service provider and the at least one device.

22. (Original) The gateway device according to claim 19, wherein the authenticator comprises a cryptographic component that encrypts and decrypts activities between the at least one service provider and the at least one device.

23. (Original) The gateway device according to claim 19, wherein the access authorizer specifies permitted activities for the at least one service provider and the at least one device.

24. (Original) The gateway device according to claim 20, further comprising a data format translator that translates the format of data transmitted and received by the at least one service provider and the at least one device.

25. (Original) The gateway device according to claim 20, further comprising a network protocol translator that translates a network protocol associated with the at least one service provider with a network protocol associated with the at least one device.

26. (Previously Presented) A gateway device for securely managing activities between at least one device and at least one service provider, comprising:

a request handler that receives activity requests from the at least one service provider and the at least one device;

an authenticator that authenticates the identity of the at least one service provider and the at least one device;

an access authorizer that permits the at least one service provider to interact with the at least one device;

an activity manager that manages the activity requests occurring between the at least one service provider and the at least one device, wherein the activity requests comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider;

a data format translator that translates the format of data transmitted and received by the at least one service provider and the at least one device during the activities; and

a response component, responsive to the request handler, the authenticator, the access authorizer, the activity manager, and the data format translator, that receives activity responses from the at least one service provider and the at least one device.

27. (Previously Presented) A gateway device for securely managing activities between at least one device and at least one service provider, comprising:

means for authenticating the identity of the at least one service provider and the at least one device;

means for permitting the at least one service provider to interact with the at least one device; and

means, responsive to the permitting means and the authenticating means, for managing the activities occurring between the at least one service provider and the at least one device, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

28. (Original) The gateway device according to claim 27, wherein the authenticating means comprises a digital signature that uniquely identifies the gateway device to the at least one service provider and the at least one device.

29. (Original) The gateway device according to claim 27, wherein the authenticating means comprises means for verifying signatures associated with the at least one service provider and the at least one device.

30. (Original) The gateway device according to claim 27, wherein the authenticating means comprises means for encrypting and decrypting activities between the at least one service provider and the at least one device.

31. (Original) The gateway device according to claim 27, wherein the permitting means specifies permitted activities for the at least one service provider and the at least one device.

32. (Original) The gateway device according to claim 27, further comprising means for receiving activity requests from the at least one service provider and the at least one device.

33. (Original) The gateway device according to claim 27, further comprising means for receiving activity responses from the at least one service provider and the at least one device.

34. (Original) The gateway device according to claim 27, further comprising means for translating the format of data transmitted and received by the at least one service provider and the at least one device.

35. (Original) The gateway device according to claim 27, further comprising means for translating a network protocol associated with the at least one service provider with a network protocol associated with the at least one device.

36. (Previously Presented) A system for securely providing services between a first site and a second site, comprising:

at least one appliance linked in a first network at the first site;

a service provider linked to the at least one appliance in a second network at the second site; and

a gateway device that securely manages the services provided between the at least one appliance and the service provider, the gateway device comprising an authenticator that authenticates the identity of the service provider and the at least one appliance; an access authorizer that permits the service provider to interact with the at least one appliance; and a service manager, responsive to the authenticator and the access authorizer, that manages the services provided between the service provider and the at least one appliance, wherein the services comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

37. (Original) The system according to claim 36, wherein the authenticator comprises a digital signature that uniquely identifies the gateway device to the service provider and the at least one appliance.

38. (Original) The system according to claim 36, wherein the authenticator comprises a digital signal verifier that verifies signatures associated with the service provider and the at least one appliance.

39. (Original) The system according to claim 36, wherein the authenticator comprises a cryptographic component that encrypts and decrypts services provided between the service provider and the at least one appliance.

40. (Original) The system according to claim 36, wherein the access authorizer specifies permitted services for the service provider and the at least one appliance.

41. (Original) The system according to claim 36, further comprising a request handler that receives service requests from the service provider and the at least one appliance.

42. (Original) The system according to claim 36, further comprising a response component that receives service responses from the service provider and the at least one appliance.

43. (Original) The system according to claim 36, further comprising a data format translator that translates the format of data transmitted and received by the service provider and the at least one appliance.

44. (Original) The system according to claim 36, further comprising a network protocol translator that translates a network protocol associated with the service provider with a network protocol associated with the at least one appliance.

45. (Previously Presented) A system for securely providing remote monitoring and diagnostics, comprising:

at least one device linked in a first network;

a service provider linked to the at least one device in a second network; and

a gateway device that securely manages remote monitoring and diagnostic activities between the at least one device and the service provider, the gateway device comprising an authenticator that authenticates the identity of the service provider and the at least one device; an access authorizer that permits the service provider to interact with the at least one device; and an activity manager, responsive to the authenticator and access authorizer, that manages the remote monitoring and diagnostic activities provided between the service provider and the at least one device, wherein the remote monitoring and diagnostic activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider

46. (Original) The system according to claim 45, wherein the authenticator comprises a digital signature that uniquely identifies the gateway device to the service provider and the at least one device.

47. (Original) The system according to claim 45, wherein the authenticator comprises a digital signal verifier that verifies signatures associated with the service provider and the at least one device.

48. (Original) The system according to claim 45, wherein the authenticator comprises a cryptographic component that encrypts and decrypts remote monitoring and diagnostic activities provided between the service provider and the at least one device.

49. (Original) The system according to claim 45, wherein the access authorizer specifies permitted remote monitoring and diagnostic activities for the service provider and the at least one device.

50. (Original) The system according to claim 45, further comprising a request handler that receives remote monitoring and diagnostic requests from the service provider and the at least one device.

51. (Original) The system according to claim 45, further comprising a response component that receives remote monitoring and diagnostic responses from the service provider and the at least one device.

52. (Original) The system according to claim 45, further comprising a data format translator that translates the format of data transmitted and received by the service provider and the at least one device.

53. (Original) The system according to claim 45, further comprising a network protocol translator that translates a network protocol associated with the service provider with a network protocol associated with the at least one device.

54. (Previously Presented) A method for securely managing activities between at least one device and at least one service provider, comprising:

authenticating the identity of the at least one service provider and the at least one device;

permitting the at least one service provider to interact with the at least one device; and

managing the activities occurring between the at least one service provider and the at least one device, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

55. (Original) The method according to claim 54, wherein the authenticating comprises verifying signatures associated with the at least one service provider and the at least one device.

56. (Original) The method according to claim 54, wherein the authenticating comprises encrypting and decrypting activities between the at least one service provider and the at least one device.

57. (Original) The method according to claim 54, wherein the permitting comprises specifying permitted activities for the at least one service provider and the at least one device.

58. (Original) The method according to claim 54, further comprising receiving activity requests from the at least one service provider and the at least one device.

59. (Original) The method according to claim 54, further comprising receiving activity responses from the at least one service provider and the at least one device.

60. (Original) The method according to claim 54, further comprising translating the format of data transmitted and received by the at least one service provider and the at least one device.

61. (Original) The method according to claim 54, further comprising translating a network protocol associated with the at least one service provider with a network protocol associated with the at least one device.

62. (Previously Presented) A method for securely managing activities between a plurality of devices linked together in a first network and a plurality of service providers linked to the plurality of devices by a second network, comprising:

authenticating the identity of the plurality of devices and the plurality of service providers;

permitting the plurality of devices to interact with the plurality of service providers; and

managing the activities occurring between the plurality of devices and the plurality of service providers, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

63. (Original) The method according to claim 62, wherein the authenticating comprises verifying signatures associated with the plurality of devices and the plurality of service providers.

64. (Original) The method according to claim 62, wherein the authenticating comprises encrypting and decrypting activities between the plurality of devices and the plurality of service providers.

65. (Original) The method according to claim 62, wherein the permitting comprises specifying permitted activities for the plurality of devices and the plurality of service providers.

66. (Original) The method according to claim 62, further comprising receiving activity requests from the plurality of devices and the plurality of service providers.

67. (Original) The method according to claim 62, further comprising receiving activity responses from the plurality of devices and the plurality of service providers.

68. (Original) The method according to claim 62, further comprising translating the format of data transmitted and received by the plurality of devices and the plurality of service providers.

69. (Original) The method according to claim 62, further comprising translating a network protocol associated with the plurality of devices in the first network and a network protocol associated with the plurality of service providers in the second network.

70. (Previously Presented) A method for securely managing activities between at least one device and at least one service provider, comprising:

receiving activity requests from the at least one service provider and the at least one device;

authenticating the identity of the at least one service provider and the at least one device;

permitting the at least one service provider to interact with the at least one device;

managing the activity requests occurring between the at least one service provider and the at least one device, wherein the activity requests comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider; and

receiving activity responses from the at least one service provider and the at least one device.

71. (Original) The method according to claim 70, wherein the authenticating comprises verifying signatures associated with the at least one service provider and the at least one device.

72. (Original) The method according to claim 70, wherein the authenticating comprises encrypting and decrypting activities between the at least one service provider and the at least one device.

73. (Original) The method according to claim 70, wherein the permitting comprises specifying permitted activities for the at least one service provider and the at least one device.

74. (Original) The method according to claim 70, further comprising translating the format of data transmitted and received by the at least one service provider and the at least one device.

75. (Original) The method according to claim 70, further comprising translating a network protocol associated with the at least one service provider with a network protocol associated with the at least one device.

76. (Previously Presented) A method for securely providing services between a first site and a second site, comprising:

providing at least one appliance linked in a first network at the first site;

providing a service provider linked to the at least one appliance in a second network at the second site; and

securely managing the services provided between the at least one appliance and the service provider, comprising authenticating the identity of the service provider and the at least one appliance; permitting the service provider to interact with the at least one appliance; and managing the services provided between the service provider and the at least one appliance, wherein the services comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

77. (Original) The method according to claim 76, wherein the authenticating comprises verifying signatures associated with the service provider and the at least one appliance.

78. (Original) The method according to claim 76, wherein the authenticating comprises encrypting and decrypting services provided between the service provider and the at least one appliance.

79. (Original) The method according to claim 76, wherein the permitting comprises specifying permitted services for the service provider and the at least one appliance.

80. (Original) The method according to claim 76, further comprising receiving service requests from the service provider and the at least one appliance.

81. (Original) The method according to claim 76, further comprising receiving service responses from the service provider and the at least one appliance.

82. (Original) The method according to claim 76, further comprising translating the format of data transmitted and received by the service provider and the at least one appliance.

83. (Original) The method according to claim 76, further comprising translating a network protocol associated with the service provider with a network protocol associated with the at least one appliance.

84. (Previously Presented) A method for securely providing remote monitoring and diagnostics, comprising:

providing at least one device linked in a first network;

providing a service provider linked to the at least one device in a second network; and

securely managing remote monitoring and diagnostic activities between the at least one device and the service provider, comprising authenticating the identity of the service provider and the at least one device; permitting the service provider to interact with the at least one device; and managing the remote monitoring and diagnostic activities provided between the service provider and the at least one device, wherein the remote monitoring and diagnostic activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

85. (Original) The method according to claim 84, wherein the authenticating comprises verifying signatures associated with the service provider and the at least one device.

86. (Original) The method according to claim 84, wherein the authenticating comprises encrypting and decrypting remote monitoring and diagnostic activities provided between the service provider and the at least one device.

87. (Original) The method according to claim 84, wherein the permitting comprises specifying permitted remote monitoring and diagnostic activities for the service provider and the at least one device.

88. (Original) The method according to claim 84, further comprising receiving remote monitoring and diagnostic requests from the service provider and the at least one device

89. (Original) The method according to claim 84, further comprising receiving remote monitoring and diagnostic responses from the service provider and the at least one device.

90. (Original) The method according to claim 84, further comprising translating the format of data transmitted and received by the service provider and the at least one device.

91. (Original) The method according to claim 84, further comprising translating a network protocol associated with the service provider with a network protocol associated with the at least one device.

92. (Previously Presented) A computer-readable medium storing computer instructions for controlling a computer system to securely manage activities between at least one device and at least one service provider, the computer instructions comprising:

authenticating the identity of the at least one service provider and the at least one device;

permitting the at least one service provider to interact with the at least one device; and

managing the activities occurring between the at least one service provider and the at least one device, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

93. (Original) The computer-readable medium according to claim 92, wherein the authenticating instructions comprises verifying signatures associated with the at least one service provider and the at least one device.

94. (Original) The computer-readable medium according to claim 92, wherein the authenticating instructions comprises encrypting and decrypting activities between the at least one service provider and the at least one device.

95. (Original) The computer-readable medium according to claim 92, wherein the permitting instructions comprises specifying permitted activities for the at least one service provider and the at least one device.

96. (Original) The computer-readable medium according to claim 92, further comprising receiving activity requests from the at least one service provider and the at least one device.

97. (Original) The computer-readable medium according to claim 92, further comprising receiving activity responses from the at least one service provider and the at least one device.

98. (Original) The computer-readable medium according to claim 92, further comprising translating the format of data transmitted and received by the at least one service provider and the at least one device.

99. (Original) The computer-readable medium according to claim 92, further comprising translating a network protocol associated with the at least one service provider with a network protocol associated with the at least one device.

100. (Previously Presented) A computer-readable medium storing computer instructions for controlling a computer system to securely manage activities between a plurality of devices linked together in a first network and a plurality of service providers linked to the plurality of devices by a second network, the computer instructions comprising:

authenticating the identity of the plurality of devices and the plurality of service providers;

permitting the plurality of devices to interact with the plurality of service providers; and

managing the activities occurring between the plurality of devices and the plurality of service providers, wherein the activities comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider.

101. (Previously Presented) A computer-readable medium storing computer instructions for controlling a computer system to securely manage activities between at least one device and at least one service provider, the computer instructions comprising:

receiving activity requests from the at least one service provider and the at least one device;

authenticating the identity of the at least one service provider and the at least one device;

permitting the at least one service provider to interact with the at least one device;

managing the activity requests occurring between the at least one service provider and the at least one device, wherein the activity requests comprise exchanging status information, diagnostic information, usage history, notifications of failure and status updates between the device and the service provider; and

receiving activity responses from the at least one service provider and the at least one device.